

Work Order ID 93852-3

November-23-12 10:47:32 AM

93852

Page 1

Item ID: D2741

Revision ID:

Item Name: Blade, 350 Skidtube

Start Date: 11/23/12 Start Qty: 40.00

Required Date: 12/14/12 Req'd Qty: 40.00

Reference:

Accept

N9000040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

40

40

Approvals:

Process Plan:

QC:

Date: 12/11/12 Tooling:

Date:

SPC (Y/N):

Date:

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/
Work Center ID

Draw Nbr

D2741

100

100

Bandsaw

Jeaspa Bandsaw

Operation
Description

Revision Nbr

Rev C

BAND SAW

Memo

Cut blanks 13.850" long +0.063" -0.000"

Set Up/
Run Hours

0.00

0.00

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

110

HAAS I

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

I-Machine per folio FA108

0.00

0.00

120

120

QC

Quality Control

QC2-Inspect parts off machine FA108

Memo

0.00

0.00

3/10/17

3/10/17

38

0

3/10/15

3/10/15

38

0

3/10/15

3/10/15

38

0



Work Order ID 93852

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Page 2

Item ID: D2741

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Blade, 350 Skidtube

Start Date: 11/23/12 Start Qty: 40.00

40

Cust Item ID:

Required Date: 12/14/12 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

130

QC

Quality Control

QC8- Inspect parts - second check

0.00

Memo

0.00

140

140

Small Fab

Small Fab

Small Fab

Memo

1-Debur2-Bend per Dwg D2741

0.00

0.00

150

150

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00





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Page 1

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N9000040100

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Cust Item ID:

Required Date: 12/14/12 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*

QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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190

190

Small Fab

Small Fab

Small Fab

Memo

1-Pass in deburring machine 2-Grind off edges

0.00

0.00

4 0

Jm 13-2-22

195

195

Hand Finish

Hand Finishing

Memo

clean with wash & wipe to remove oil

0.00

0.00

4 0

Jm 13-2-22

200

200

Powdercoat

Powder Coating

White Glass Bead 1.2-2.0 per QSI005 4.3-Steel

Memo

START TIME

FINISH TIME

0.00

0.00

OVN TEMPERATURE

1:35

2:05

H d BL 13-2-26



Work Order ID 93852

November-23-12 10:47:32 AM

93852

Page 5

Item ID: D2741

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Blade, 350 Skidtube

Start Date: 11/23/12 Start Qty: 40.00

40

Required Date: 12/14/12 Req'd Qty: 40.00

40

Cust Item ID:

Reference:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

210

QC3-Inspect Part Finish

0.00

210

QC

Memo

0.00

Quality Control

Smb
13/2/27

4

220

Identify as per dwg & Stock Location

0.00

220

Packaging

Memo

0.00

Packaging

5/4/66

13/2/27 (4)

230

QC21-Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

Quality Control

ms 13-02-27

u 13-02-27



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93852

Page 5

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Revision ID:

N900040100

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Stop *NS2*

Start Date: 11/23/12 Start Qty: 40.00

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Required Date: 12/14/12 Req'd Qty: 40.00

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Cust Item ID:

Reference:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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210

QC3- Inspect Part Finish

0.00

210

QC

Memo

0.00

Quality Control

220

Identify as per dwg & Stock Location

0.00

220

Packaging

Memo

0.00

Packaging

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

Quality Control



Picklist Print

November-23-12 10:47:32 AM

Page 1

Work Order ID: 93852

Parent Item: D2741

Parent Item Name: Blade, 350 Skidtube

Start Date: 11/23/12

Required Date: 12/14/12

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP Rev: D00.11.15Removed P/O turning - in house processEC

IPP Rev: E 06-03-20 As Per Rev C

JLM

IPP Rev: E 06.04.20Added grinding after heat treating EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
4130 Bar 0.500 x 3.00		Purchased	No			100		13.0500	1.1541	48.593684			

Location

Loc Qty

Loc Code

MAI034

12.09

118585

12.09

4130

46.250

20 12/14/12



Work Order: 4282

Description: Blade

Part Number:	D2741
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Section Dwg: D2741

Rev: C

Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X

First Article

Prototype

[illegible]

Measured by:

Date:

Audited by:

Date:

Prototype Approval:

N/A

Date:

N/A

Date	Change
------	--------

03 12 22 New Issue

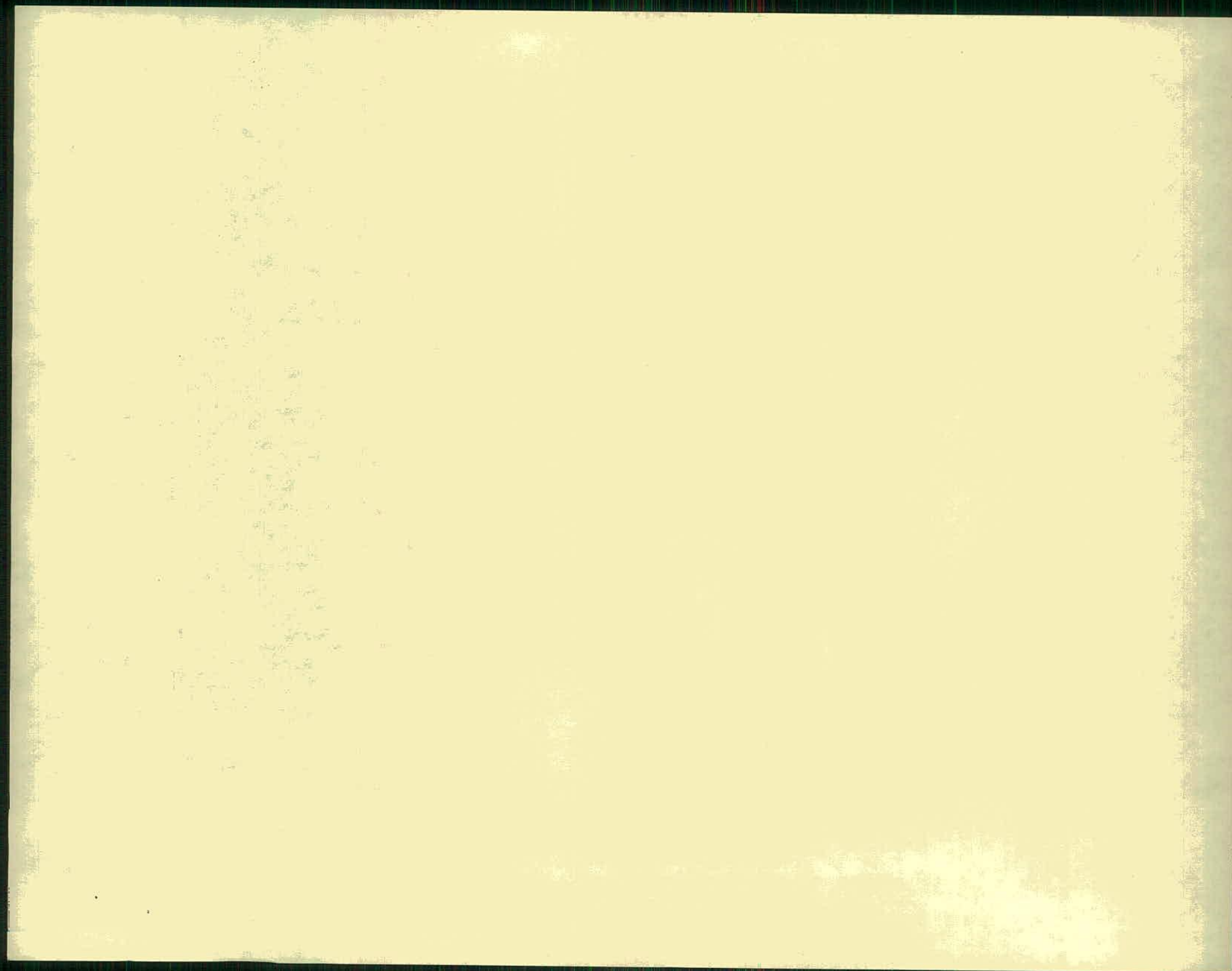
06 03 09 Revised per Rev. C

Revised by

Approved

KJ/RH

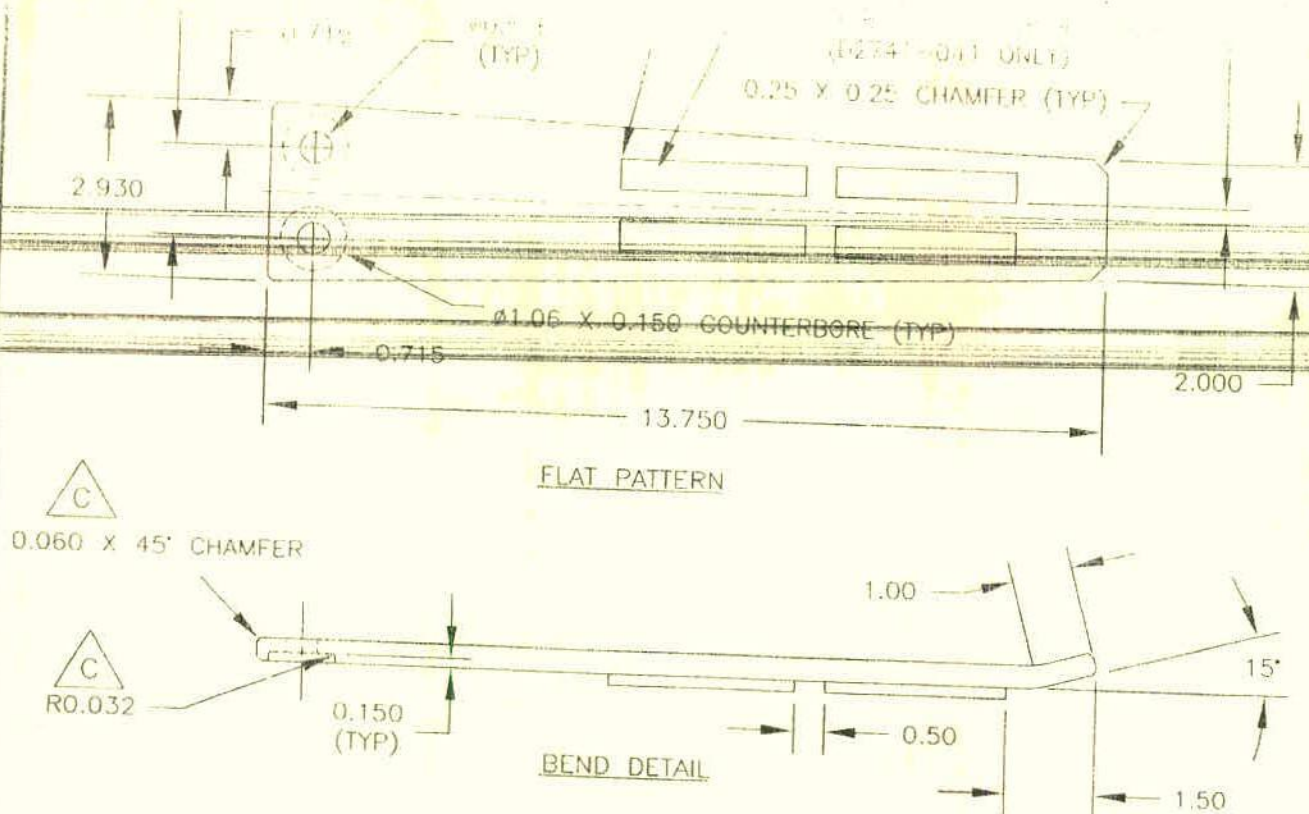
KJ/JLM



DART

RELEASED

DESIGN	DRAWN BY	DART AEROSPACE USA, INC.
PHH	PHH	PORT HADLOCK, WA
CHECKED	APPROVED	DRAWING NO.
PHH	PHH	D2741
DATE	TITLE	SHEET 1 OF 1
06.01.12	BLADE	SCALE 1:3
A	98.04.16	NEW ISSUE
B	98.09.01	CHANGE C'SINK TO C'BORE
C	06.01.12	LARGER HOLE, ADD RADIUS AND CHAMFER ADD -041/-043 OPTIONS



D2741 BLADE

- 1) MATERIAL: AISI 4130 STEEL 0.375 THICK
MIN. ULTIMATE TENSILE STRENGTH = 152 ksi (34-40 HRC)
MIN. YIELD TENSILE STRENGTH = 141 ksi
- 2) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.030 TO 0.060
- 6) TO MAKE D2741-041, WELD D2941-300 (4) AS SHOWN ABOVE.
REMOVE POWDER COAT FROM SURFACE OF D2941-300
- 7) TO MAKE D2741-043, WELD 7560 HARDCOAT ROD INSTEAD OF D2941-300



DART
aerospaceDart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053**PURCHASE ORDER**

Purchase Order ID PO18922

Purchase Order Date 1/23/2013

PO Print Date 1/25/2013

Page Number 1 of 1

Order From :

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

VC-MET004

Contact Name

Vendor Phone

450 473 1884

Vendor Fax

450 491 5498

Vendor Account Nbr

Buyer

Brigitte Golden

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination Collect

Ship To :

DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	93852	Blade D2741	2/6/2013 Yes	✓ 38.00	FedEx P collect	\$10.7000	\$406.60

Special Inst:

Harden mat. as per DWG: D2741
Min ultimate tensile strength = 152KSI (34-40 HRC)
Min yield tensile Strength = 141 KSI
Test report of Cert. required
Snadblast part

PO Total:

\$406.60

Change Nbr:

4

Change Date: 1/25/2013

No substitution or deviation without
consent.Certificate of Conformity or Material
Certification required - YES NO



METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
183032	1	68608

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer 215

DART AEROSPACE

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

LIVRÉ À / Shipped To

DART AEROSPACE

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
PO18922		4130	2013/1/24	FEDEX

QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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38 D2741 132

BLADE

(38) BLADE D2741

REFERENCE 93852

DWG: D2741

CONTENANT: 2 BOÎTES DE CARTON

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	2	

CERTIFICAT

EMPAQUETAGE
Packing

QUANTITÉ EXPÉDIÉE / Quantity Shipped 38

POIDS EXPÉDIÉ / Weight Shipped 132.00

QUANTITÉ RESTANTE / Quantity Remaining 0

POIDS RESTANT / Weight Remaining 0.00

CERTIFICAT

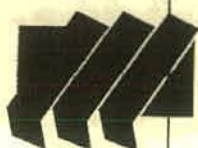
QUANTITÉ EXPÉDIÉE / Quantity Shipped 38

POIDS EXPÉDIÉ / Weight Shipped 132.00

Signature:

Date:





METCOR INC.

560 BOUL. ARTHUR-SAUVÉ

ST-EUSTACHE, QC, J7R 5A8

Tel.: 450 473-1884 / Téléc. / Fax : 450 491-5498

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
183032	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

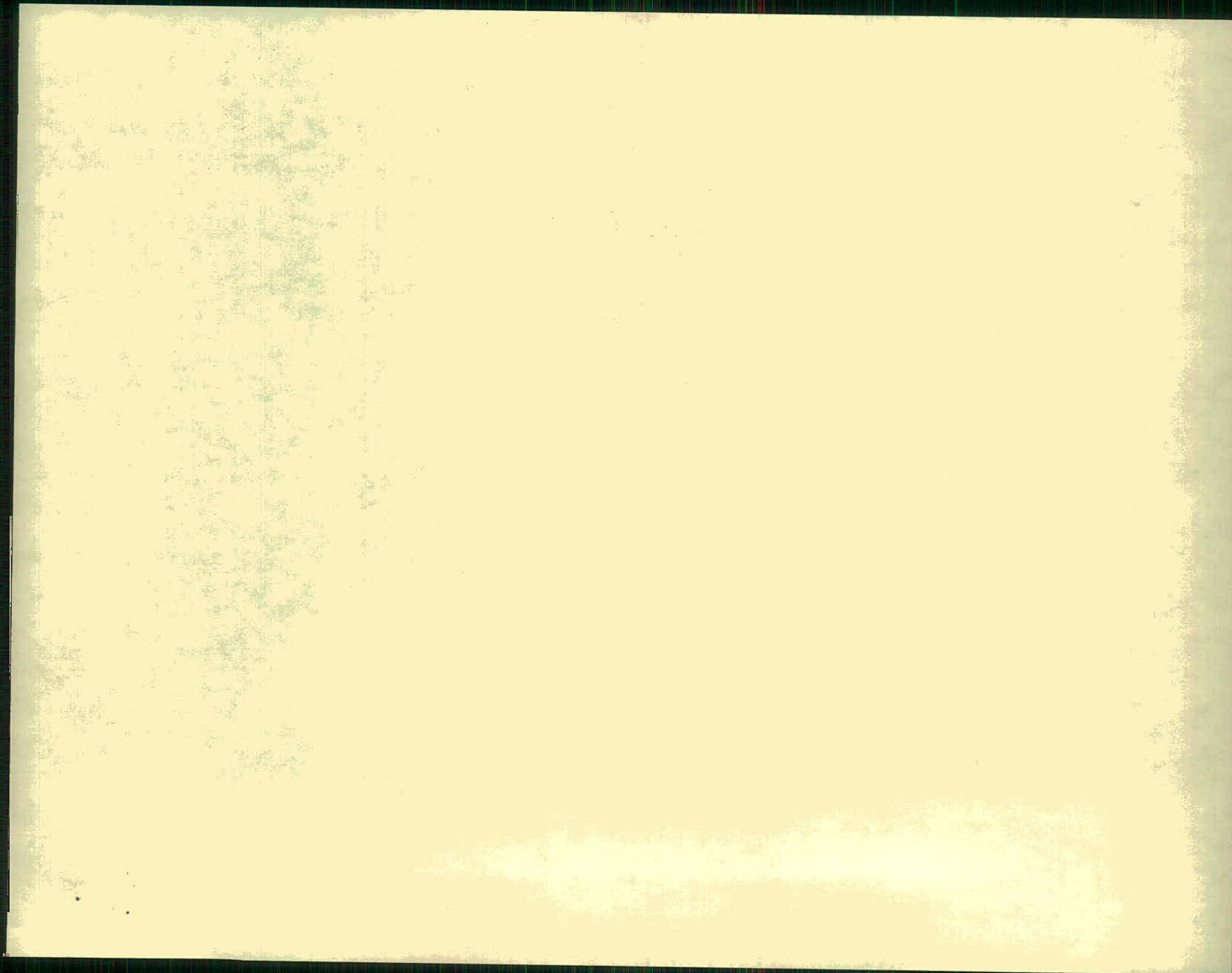
ON K6A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat heat code	NUMÉRO DE LOT lot number
PO18922		4130		
<u>SPECIFICATIONS DU PROCÉDÉ</u> processing specifications				
SEL HARDEN HARDEN AND TEMPER SAE AMS 2759/1 REV.E				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	
HARDNESS	34 - 40 HRC		38	
TENSILE (KSI)	152 - 182 KSI		38.0 - 40.0 HRC	
			171.0 - 182.0 KSI	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
38	132	D2741 BLADE (38) BLADE D2741 REFERENCE 93852 DWG: D2741 CONTENANT: 2 BOÎTES DE CARTON		

COMMENTAIRES / comments

LES TRAITEMENTS THERMIQUES SUR CETTE COMMANDE A ÉTÉ FAIT EN UTILISANT DES EQUIPEMENTS EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION AMS2759.
TOUTES LES OPÉRATIONS DE TRAITEMENT THERMIQUE ONT ÉTÉ FAITES EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION DEMANDÉE ET TOUTES LES VÉRIFICATIONS ET LES TESTS DEMANDÉES ONT ÉTÉ FAITES ET DOCUMENTÉES.
AUCUN CHANGEMENT OU DÉROGATION N'A ÉTÉ FAITE PAR RAPPORT AU TRAITEMENT THERMIQUE DEMANDÉ.
ON CERTIFIE QUE LE MATÉRIEL A ÉTÉ FABRIQUÉ, ÉCHANTILLONNÉ, TESTÉ ET INSPECTÉ EN ACCORD AVEC LES SPÉCIFICATIONS DU MATÉRIEL ET LE BON DE COMMANDE ET LE MATÉRIEL RENCONTRE LES EXIGENCES SPÉCIFIÉS.

ACCOMPLISHED USING HEAT TREATMENT EQUIPEMENT THAT MEETS THE REQUIREMENTS OF AMS 2759. ALL THE HEAT TREATMENT OPERATIONS WERE ACCOMPLISHED IN ACCORDANCE WITH THE REQUESTED/REQUIRED HEAT TREATMENT SPECIFICATION AND ALL REQUIRED VERIFICATIONS TEST HAVE BEEN PERFORMED AND DOCUMENTED. NO UNAUTHORIZED CHANGES OR ALL THE HEAT TREATMENT





METCOR INC.

560 BOUL. ARTHUR-SAUVÉ

ST-EUSTACHE, QC, J7R 5A8

Tel.: 450 473-1884 / Téléc. / Fax : 450 491-5498

Certificat de Conformité

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BON DE TRAVAIL order	CHARGEMENT load
183032	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

PROCESSING PERFORMED ON THIS ORDER WAS DEVIATIONS TO REQUIRED HEAT TREATMENT SPECIFICATIONS OR PROCEDURES HAVE BEEN PERFORMED. WE CERTIFY THAT THE MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE MATERIAL SPECIFICATION AND THE PURCHASE ORDER AND WAS FOUND TO MEET THE REQUIREMENTS.

CERTIFIÉ par / Certified by:

J. G. G. G.

DATE: 2013-02-11



